

MATHEMATICS

ADOPTION EFFECTIVE
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Position Statement: Mathematics

The preamble to the State Achievement Standards for mathematics states: “The language of mathematics is a powerful tool for exploring, explaining, and understanding the universe. Proficiency in using mathematics is vital to citizens of an increasingly technological society.” The State Curricular Materials Selection Committee recognizes the importance of this statement and that mathematics curricula have profound influence on what students will know and be able to do in mathematics. In making its selections for inclusion in the Idaho Adoption Guide for Curricular Materials, the Committee reviewed major trends and issues in mathematics education. Two of the principle items discussed are listed below. Districts selecting new mathematics curricular materials should consider these in selecting textbooks or curricular materials.

Breadth vs. Depth. Studies such as the Third International Mathematics and Science Study (TIMSS) highlight the fact that curricular materials in the United States tend to include more topics than the curricular materials in other countries for a given year. Moreover, even though fewer topics are addressed each year in other countries, the study revealed that by the end of secondary school at least as many topics are covered in other countries and in greater depth than in the United States. This finding, coupled with the relatively poor performance by U.S. students on the mathematical portion of this study demonstrates that decisions about which topics are included, when they are introduced, and in what depth have a strong impact on the success of school mathematics programs.

Mathematical Content and Processes. Mathematical content and processes are important and fundamental in school mathematics programs if they are useful - either for developing other mathematical ideas, linking areas of mathematics, or forming and solving problems outside of mathematics. Concepts such as place value, function, scaling and similarity, structure in the number system, and rate of change are basic and essential to understanding a variety of areas of mathematics. Mathematical processes such as making sound arguments of knowing when and how to use technology are also fundamental. Frequently used basic facts and definitions are important to support problem solving and mathematical communication. Mathematical thinking and reasoning skills that can be applied in a range of situations outside of school are also important, as are the basic facts and computational skills needed in doing the daily mental calculations and estimations that all citizens encounter